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The National Lubricating Grease Institute *Praeteritus, Praesens and Futura*

RALPH R. MATTHEWS

For several years prior to 1933 some manufacturers of lubricating greases had discussed, at informal meetings, the feasibility of an association to further their interests in all legitimate ways. A particular need for it was shown in 1932 when a Federal Excise Tax of four cents per gallon was placed on lubricating oil and no provision was made for manufacturers of lubricating greases to pass that tax on to their customers.

Through the energetic leadership of M. B. Chittick, J. R. Battenfeld and the late James McKee an organization meeting was held in Chicago on June 29, 1933. From it came the National Association of Lubricating Grease Manufacturers, Inc. Incorporation papers were filed September 27, 1933, under the laws of the state of Ohio with the following persons named as acting trustees or directors:

W. T. Atkins
J. R. Battenfeld
M. B. Chittick
James McKee
Guy Peters
William H. Saunders, Jr.

The first officers chosen to guide the destinies of the new association were:

President J. R. Battenfeld
Vice-President James McKee
Treasurer H. H. Hower
Secretary Guy Peters

The following quotations are from the Articles of Incorporation indicating the aims and purposes of the association:

"To act as a clearing house for the manufacturers and the trade in the collection and dissemination of lawful information per-

tinent to the industries of lubricating grease manufacturing, oil compounding and allied industries and to promote the following activities:

(a) The development of standards through research, practical tests and other available means, the application of which, by individual manufacturers, will insure a proper measure and quality in each of the industry's products, and to collaborate with various allied technical and trade associations.

(b) The furtherance of simplification in respect to the items produced by the industry, due consideration being given to economies procurable to the industry, the trade, and the consuming public through avoidance of needless duplication and wasteful multiplication of items.

(c) The fostering of such industry policies as well (1) tend to maintain free, open and public competition between manufacturers and all classes of trade who serve in distributing the products of the industry; and (2) discourage unethical, unfair and unlawful methods of competition.

(d) The development through research and promotion of new uses and markets for the industry's products.

(e) The encouragement through industry advertising and publicity of an increased consumption of the industry's products.

(f) The collection of lawful information among manufacturers with respect to production, credits, and such other matters as may be of value to the different manufacturers and the trade, for dissemination to members only.

(g) To aid the industry and to promote the general welfare thereof in every possible lawful manner."

As the organization is now in its eleventh year let us examine what has been accomplished, bearing in mind the purposes as outlined in the Articles of Incorporation.

Guy Peters served well and faithfully as secretary until 1935 when D. S. Hunter and Associates of Cleveland, Ohio, were chosen to handle this work. During the period of 1935 to 1938 the name was changed to the National Lubricating Grease Institute and a monthly publication was started under the name of The Institute Spokesman. Since it was eventually felt that best results could be obtained with an individual secretary rather than an organization such as the above, George W. Miller was elected secretary in 1938 and has most capably handled that position since then.

A general meeting of the National Lubricating Institute has been held in the fall of each year. Interesting and informative papers have been presented covering lubricating greases, and their applications. Discussion of the papers has always been encouraged and has always brought out data of value to those attending the meetings. In order not to keep the scope of the meetings too limited papers on allied subjects and other matters were also placed on the program.

These meetings and those of the Board of Directors, have provided an excellent means of getting acquainted with others in the same industry and learning they really are not closely associated with Mephistophiles. Good fellowship has thus been promoted

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Reviewing the 1942 Cars -- What They Need for 1944

By WALTER E. BLAINE *CHEK-CHART Detroit Field Engineer*

LINCOLNS

Regular systematic inspection of mechanical adjustments and proper lubrication will insure that excellent performance which is a feature of Lincoln cars.

The 1942 models are known as the Zephyr, Continental, and Custom. The principal chassis units are the same for all models. Welded unit body-and-frame construction is common on all cars, with truss type construction for closed cars.

Government restrictions prohibiting the use of certain types and grades of oils and greases in civilian passenger cars does not affect Lincoln's original recommendations in any way.

SPECIAL FEATURES

Optional equipment features found on 1942 Lincoln cars are Transmission Overdrive with standard transmission, and Liquamatic Drive (which includes Liquid Coupling, Automatic Transmission and Overdrive).

In the liquid drive, power is transmitted through a cushion of oil. The liquid flywheel consists of two cup-shaped discs equipped with vanes, all enclosed in a bath of oil. Oil changes are unnecessary, but the oil level should be checked every 5,000 miles only by an authorized Lincoln dealer.

The recommended lubricant to be used in both the standard and overdrive transmissions is regular Mineral Gear Oil SAE 90 above +32°F. and SAE 80 below +32°F. The capacity of the standard transmission is 2 3/4 pt. or lb.; 3 3/4 pt. or lb. is required with overdrive transmission.

Two fill plugs are used when equipped with overdrive. To drain, remove both plugs. To fill, fill overdrive first to plug level, then the transmission. Both standard and overdrive transmissions should be drained every 5,000 miles.

For differentials, SAE 90 HP is recommended for above -10°F. and SAE 80 HP below -10°F. The capacity of the differential on all cars is 4 pt. or lb. Differential cases should be drained every 5,000 miles.

UNDER HOOD POINTS

The crankcase capacity on all models is 5 qt. SAE 30 is recommended down to +32°F. SAE 20, 20W down to +10°F., and No. 10W should be used for temperatures below +10°F. The crankcase should be drained and filled with new oil every 5,000 miles.

The oiler for the distributor is reached from the left hand side of the engine and requires a few drops of Motor Oil every 1,000 miles.

The generator has one oiler, at the rear. Use Motor Oil every 1,000 miles.

Two water pumps are used, one for each bank of cylinders. Fill oilers every 1,000 miles with Motor Oil.

The steering gear plug should be removed each time the car is lubricated and, if necessary, fill with SAE 90EP the year round.

A remote control shift bearing, requiring Chassis Lubricant every 1,000 miles, is just ahead of the dash adjacent to the steering gear column.

MISCELLANEOUS LUBRICATION POINTS

Pressure gun fittings which require Chassis Lubricant every 1,000 miles are provided for king pins, tie rods, drag links, clutch release shaft (2), clutch and brake pedals (3), propeller shaft bearing, and propeller shaft steady bearing.

Removal of front and rear wheels is necessary to lubricate the bearings. Remove, clean and repack with Wheel Bearing Grease every 5,000 miles.

Springs on all models have rubber liners and therefore must not be lubricated.

Houde shock absorbers are used on all models. Every 5,000 miles, refer to an authorized dealer for filling and adjusting, if necessary.

Air cleaners are of the heavy duty oil bath type. Interval of servicing depends largely on operating conditions but removal is necessary at least every 5,000 miles. Remove, clean, fill to indicated oil level with Motor Oil SAE 40 above +32° and No. 20W below +32°, and replace.

Prelubricated points, or points requiring no lubrication, are the fan, clutch release bearing, starter, springs and spring shackles, and parking brake cables.

The oil filter is standard equipment on all 1942 Lincoln models. This unit requires no attention except that the filter element should be replaced every 10,000 miles by an authorized Lincoln dealer.

The identifying serial number on all Lincoln models is the same as the engine and is on the rear of the engine on top of the clutch housing and also on front engine support bracket, left side.

While the manufacturer has issued no special instructions to increase tire pressures, as recommended by the Government to prolong tire life, it is likely that pressures are automatically being increased slightly.

AUTOMATIC TOPS AND WINDOW REGULATORS

On Continental models, the automatic top is raised by means of two electric motors which require no regular lubrication service.

On Zephyr models the automatic top is raised and lowered by hydraulic cylinders, one on each side of the body. The reservoir for the hydraulic fluid is under the hood, on the right side. The fluid supply should be checked every 5,000 miles.

Electro-hydraulic window regulators (on Zephyr convertible models only) are provided for the raising and lowering of windows. The hydraulic fluid reservoir should be checked every 5,000 miles by a Lincoln dealer.

Vacuum-controlled window regulators (on Continental and Custom models) are provided. A control valve button is on the inside of each door. The division glass on the Lincoln Custom model is also operated in a similar manner.

OLDSMOBILE

It now appears that owners of 1942 and older models of Oldsmobile cars will be compelled to operate their present model during 1944. All cars, regardless of make, are now being put to a more severe test of endurance than was ever previously anticipated. Proper inspection service and correct lubrication at more frequent intervals is of major importance in keeping 'em rolling until the war is won.

MODELS

The 1942 models of Oldsmobile 6 and 8 cylinder jobs also carry "series" identifications. These are the 60 Series on 119 in. wheelbase, with either a 6 or 8 cyl. engine; the 70 series on 125 in. wheelbase, with either a 6 or 8 cyl. engine; and the 90 Series, 127 in. wheelbase, with 8 cyl. engine only. The lubrication details are similar on all models, except for the difference in the capacities of some major units.

The identifying serial number for each car will be found on a plate on front of dash, left side. On units built at Linden, N. J. the serial number is preceded by the

(Continued on page 4)

The INSTITUTE SPOKESMAN

Published monthly by

THE NATIONAL LUBRICATING GREASE
INSTITUTE

GEORGE W. MILLER Editor

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which has led to better team work in carrying on what has been accomplished by the Institute.

In line with (a) of the above Articles of Incorporation a Standards and Specifications Committee was appointed at an early date under the Chairmanship of M. B. Chittick. In 1936 this committee started active work on a classification of lubricating greases to be based *solely on worked consistencies* as determined by ASTM method D-217-38T. By 1938 the cooperative work of the committee had developed a classification which seemed reasonable and sensible.

After that the classification was given wide publicity through the Institute Spokesman and trade publications with a request for comments and suggestions from all concerned. It is interesting that letters received were practically unanimous in approval even though in many cases it meant a change in consistencies of products being manufactured. At the annual meeting in 1939 the classification was adopted by the Institute and a date of March 1, 1941, was set for it to become officially effective. This was done to allow for adjustment of stocks, containers, etc., and also to permit automotive and industrial users of lubricating greases to become familiar with the classification.

In specification prepared three years ago by the Procurement Division of the Treasury Department the NLGI classification was used and that led to its use in other government divisions. Automotive and Industrial consumers have been quick to adopt the classification so it will not be long before it is universally recognized as a proper grade guide. To M. B. Chittick, now a Colonel in Chemical Warfare Service, should go full credit for his splendid individual work in securing the adoption and use of the NLGI classification of lubricating greases.

This represents the principal accomplishment thus far of the Standards and Specifications Committee, which is now known as the Technical Committee, but there has been close cooperation as a group and individually with Committee D-2 of the American Society for Testing Materials which already had set up some Standards and Tentative Standards for testing lubricating greases. Last year C. W. Georgi agreed to take the chairmanship of the Technical Committee and under his able and forceful guidance work is going on and plans have been made which will mean development of more accurate methods for controlling the manufacture of lubricating greases. Application and manufacturing problems will also have due consideration.

While the adoption of the NLGI classification has been of some assistance in simplification of lines of lubricating greases ("B" above) there is much yet to be done to reach even partial standardization. Many purchasers still buy under "screwy" specifications, insist on special colors, must have a particular texture or some other property which requires extra work. This is particularly true in connection with industrial lubricating greases. The sad part about it is that some regular line product would probably provide as good or better lubrication. The Institute could render a real service for themselves and user of lubricating greases if a vigorous attack was made on this problem.

No effort has been made by the Institute, as such, to develop new users or markets ("D" and "E") for lubricating greases either by advertising or otherwise. It seems these purposes as stated in the articles of incorporation should have attention because of increased volume of business which should result from such a program.

The collection of information as to production, credits, etc. has not been successful. An effort was made several years ago to obtain data on production but some members of the Institute failed to cooperate. It has never been disclosed as to whether they thought their production figures were too large or too small but it does seem those companies should have made a *guess* and placed it as large as seemed desirable.

Because mechanical equipment is playing the paramount role in this war more attention than ever has been focused on lubricants and particularly lubricating greases. Already a simplified line of automotive greases has been adopted by the army using NLGI classifications and new and better products have been developed for various government branches. Therefore the Institute should start right now on a post-war program which will keep members thoroughly informed on things to come and place them in position to properly care for conditions which may arise after the war. A full time secretary at such time would be most valuable in this connection if sufficient funds were made available so a capable man could be employed.

Regardless of objectives which have not been attained in the past the Institute already has a history which clearly reflects credit on those who had the foresight to organize it, and the directors who have carried on since then. Here's hoping the sights will be kept higher than ever in the future so the National Lubricating Grease Institute will be an outstanding factor in the business life of our country.

Proposed Modification of A.S.T.M. Grease Worker (Method D217-38T)

As the result of a cooperative survey, Sub-Committee IV on Grease of ASTM Committee D-2 has proposed a modification of the ASTM Grease Worker to permit use of a displacement ring to raise the level of the grease in the worker after the sixty stroke working.



While several minor objections have been raised concerning the design of the present Grease Worker, the Sub-Committee's survey indicated that most of these were of no serious consequence. The chief objection which has been commented on by most laboratories is that the Worker is not full of grease when the head and plunger is removed after the sixty stroke working, so that leveling of the grease sample in preparation for punching is difficult.

(Continued on Page 6)

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(Continued from page 2)

letter "L" and on those built in California the letter "C" precedes the number.

HYDRA-MATIC DRIVE AND TRANSMISSION

This unit is optional equipment. The lubricant capacity is 18 pt. when drained and refilled. If the unit is removed and disassembled, 20 pt. is required to bring it to the proper level. Drain and refill at the end of the first 5,000 miles and then every 10,000 miles thereafter. Use only Hydra-Matic Drive Fluid which is available at authorized Oldsmobile dealers.

If an emergency arises wherein it is impossible to obtain Special Fluid, SAE 20 may be used until nearest Oldsmobile dealer is reached, where it should be replaced with Hydra-Matic Drive Fluid.

Filler cap is reached through covered opening in floorboard. A bayonet type of oil level gage is attached to the filler cap. Check level every 2,500 miles. In filling, first add approximately 10 pt. of the fluid, run the engine a few minutes, then add the remainder of the fluid.

LUBRICATION POINTS

All chassis lubrication points on all models, except the "Under Hood" points, are reached from under the car. The front end points, such as control arms and shafts, king pins, tie rods, and steering idler arm are provided with pressure gun fittings and require Chassis Lubricant every 1,000 miles. Including the front wheel bearings, there is a total of 21 places to lubricate on the independently sprung front axle unit.

The two pedal shaft fittings (one only on Hydra-Matic Drive models) also require Chassis Lubricant every 1,000 miles.

ENGINE, GEAR UNITS

Engine—The crankcase refill capacity is 5 qt. for the 6 cyl. models and 6 qt. for the 8 cyl. models. SAE 30 is recommended for atmospheric temperatures over 90°F., SAE 20, 20W from 90°F. down to +32°F., SAE 20W down to +10°F., and SAE 10W down to -10°F. Drain and refill every 2,000 miles—more often under adverse operating conditions.

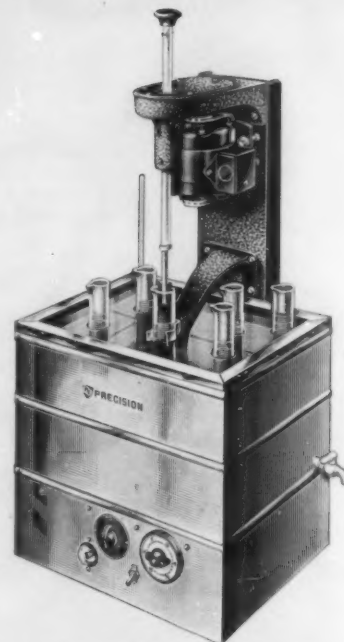
Conventional Transmission—The lubricant capacity is 2 pt. or lb. for all models. SAE 80EP or 90 EP is recommended the year round. Drain and refill every 10,000 miles. Check level frequently.

Differential—The lubricant capacity is 2½ pt. or lb. for all models. Passenger Car Duty Hypoid Gear Lubricant SAE 90 is recommended for above -10°F. and SAE 80 below -10°F. Drain and refill every 10,000 miles. Check level frequently.

UNDER HOOD POINTS

The fan and water pump bearings require no lubrication.

TESTING ★ TOPICS



AN improved emulsifier for emulsion tests according to "U. S. Government Master Specification for Lubricant and Liquid Fuels", Bur. of Mines Tech., Paper 323B, offers the following features: (1) Larger bath, 10½ x 13½ x 7" deep, has constant temperature control plus or minus 1°F. Saves time by maintaining several samples at specified temperature. (2) Fully enclosed, 1/20 H.P. constant speed motor, ball-bearing type, drives paddle at specified speed of 1500 R.P.M. (3) Automatic time switch shuts off motor at expiration of 5 minute specified running time. (4) Stainless steel shaft can be raised to permit placement or removal of cylinders. (5) Spring bronze clamp fastened to rigid bracket positions cylinder concentric with paddle. Includes copper paddle, six special 100 ml. graduated cylinders, and thermometer. Total watts, 1200. For 115 volts A.C., 60 Cycles, single phase.....\$195.00

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The generator is provided with an oiler at each end. Use a few drops of Motor Oil every 1,000 miles.

The distributor shaft bearing grease cup should be filled with Cup Grease every 1,000 miles. Turn down about one turn every week. The felt wick under the distributor rotor should have a few drops of oil at the time the distributor grease cup is serviced.

The starter oiler, at the front, requires a few drops of Motor Oil every 1,000 miles.

The steering gear requires Steering Gear Lubricant every 5,000 miles. Remove plug to fill. Check level every 1,000 miles.

MISCELLANEOUS

Rear wheel bearings are lubricated at time of assembly and need no further lubrication.

Front wheel bearings, remove wheel, clean and repack bearings with Wheel Bearing Grease every 5,000 miles.

Front and rear springs are of the coil design. (No lubrication required).

Rear support arms are rubber mounted (Do not lubricate).

Universal joints are packed at assembly and require no further attention; however, they should be examined for leaks around the seals occasionally and referred to an authorized dealer if repairs are necessary.

The universal joint spline is automatically lubricated from the transmission.

The auxiliary clutch shaft (not on models with Hydra-Matic Drive) is provided with felt inserts which should be saturated with Motor Oil every 1,000 miles.

While the clutch release bearing seldom requires lubrication, provision is made to relubricate it if squeaks develop. To expose the fitting, remove the clutch housing lower pan. Apply Petrolatum (or Vaseline) and replace pan. Do not overlubricate.

Delco shock absorbers should be refilled with recommended fluid every 5,000 miles. If evidence of leaks appears, refer to authorized dealer.

Air cleaners should be serviced as often as operating conditions demand. Motor Oil SAE 50 is recommended where an oil bath type cleaner is used. The engine oil filler cap should be cleaned at regular intervals; every 1,000 miles is none too often.

Check battery water level every two weeks and keep level at proper point.

Retread tires before carcasses are worn too thin.

NASH

Nash cars, like all other makes of cars, are getting older month by month. Just how many more months, or years, the driving public and war workers will have to continue operating their present cars is problematical—no one knows—but one well known fact is that timely servicing and proper lubrication will extend the car life.

Wherever there are metal to metal contacts of moving parts there is friction. Where there is friction there is heat, which means wear unless parts are properly lubricated as recommended by the car manufacturer.

NASH CARS ARE DIFFERENT

While the general chassis designs of the Nash Ambassador 6 (4260) and the Nash Ambassador 8 (4280) models are quite similar to the general run of construction of most 1942 models, the Nash Ambassador "600" (4240) is a continuation of the same general design of the Ambassador "600" (4140) brought out in 1941.

The 6 (4260) and the 8 (4280) are equipped with what may be called the "wishbone" type of independently sprung front wheel construction, and the Ambassador "600" is equipped with an entirely new design of independently sprung front wheel

design which is not found on any other make of car. It's exclusive with Nash.

A lubrication feature worthy of note is that Motor Oil is used in all transmissions of all Nash models, both summer and winter. While some other 1942 makes of cars carry a recommendation of Motor Oil for specially designed or over-drive transmission, Nash is the only company recommending Motor Oil for both standard and overdrive transmission units. This is not new with Nash as it has been its recommendation for several years. The point to remember is that transmission greases should *not* be used. Other special points to note in the lubrication of Nash cars are explained below.

FRONT END LUBRICATION POINTS

On models 6 (4260) and 8 (4280) the so called wishbone type of front wheel support is used. There is a total of 17 lubrication points, including wheel bearings, with this construction. All are reached from under the car except the upper control arm inner fittings which are reached from under the hood. Do *not* overlook these four fittings. Pressure gun fittings are provided for lower control arms (fitting may be either on front or rear side), upper control arms outer, tie rods, steering idler arm (right side) and drag links. King pins on models 6 (4260) and 8 (4280) have a metered fitting (do not over lubricate). Viscous Chassis Lubricant should be applied to these points every 1,000 miles.

King pins proper, on Ambassador "600" require no lubrication. However, provision was later made to lubricate the king pin upper thrust bearing. A lubricator fitting is applied to the top of the front suspension assembly on each side, extending through the front fender apron into the engine compartment. A small amount of Viscous Chassis Lubricant should be applied to these points each 5,000 miles.

(Original construction of the steering knuckle thrust bearing required no lubrication except when disassembled for other service. Present front end suspension assem-

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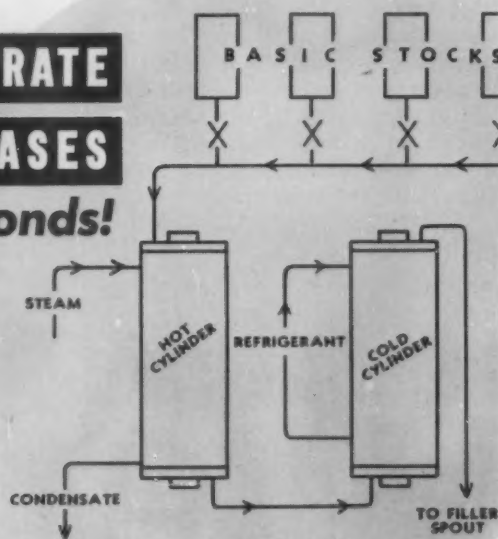
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bly, lubricated as indicated above, is part numbers 3111754A and 3111755A.)

On the Ambassador "600" front end construction, due to its unusual design, there are only five lubricant fittings, one at each end of the tie rod and one for the drag link, requiring Viscous Chassis Lubricant every 1,000 miles, and one at the top of the two front suspension assemblies requiring Viscous Chassis Lubricant each 5,000 miles.

Front wheel bearings on all models are lubricated by removing the wheel. Wash and clean bearings, pack bearings with

Wheel Bearing Grease and reassemble every 10,000 miles.

POINTS REACHED FROM UNDER THE HOOD

On model 8 (4280) the vibration dampener at the front of the engine is equipped with two filler plugs on opposite sides of the dampener. Remove both plugs and fill with Motor Oil every 3,000 miles. While the 1942 model 8 (4280) is the only 1942 model requiring this service, it should be borne in mind, however, that all 1941 models should be similarly lubricated.

The fan on all models is of the reservoir over-flow design and is lubricated every 1,000 miles by turning the plug hole screw to top position, removing screw plug, and filling with about 2 oz. of Motor Oil. Plug hole should then be turned to bottom position to drain out excess oil and screw plug replaced.

The distributor on models 6 (4260) and 8 (4280) is equipped with an oil cup. Lubricate with Motor Oil every 1,000 miles. Also at the same time remove the rotor and place a few drops of Motor Oil on the felt wick exposed by removing the rotor (all models).

The distributor on the Ambassador "600" is provided with a grease cup which should be filled with Wheel Bearing Grease and turned down a few turns every 1,000 miles.

The generator on all 1942 models has an oiler at each end of the unit. Apply a few drops of Motor Oil to each every 5,000 miles.

On water pumps, all 1942 models, it is necessary to remove a cover from the fitting before applying Water Pump Grease every 2,000 miles.

The starting motor on the Ambassador "600" is prelubricated and requires no lubrication. On models 6 (4260) and 8 (4280) an oiler is provided at both front

Proposed Modification, etc.

(Continued from Page 3)

The proposed modification is quoted as follows: "In order to raise the level after working a displacement ring may be inserted in the grease worker until it rests on the bottom of the worker." The drawing shows the dimensions of the proposed displacement ring, together with a ring insertion and lifting tool.

The Precision Scientific Company of Chicago, Illinois is in position to supply displacement rings and lifting tools as per the drawing.

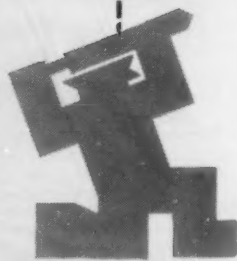
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and rear end of the unit. Use Motor Oil every 5,000 miles. The starter on the 8 (4280) is reached from the right side and on the 6 (4260) model it is reached from the left side.

The steering gear on all models is lubricated by removing the plug in the steering gear case. Use Hypoid Gear Lubricant SAE 140 the year round. Check level every 1,000 miles.

OTHER FITTINGS

Underneath the chassis and to the rear of the engine there are seven other lubrication fittings to service on models 6 (4260) and 8 (4280). The clutch and brake pedal shaft each have one fitting, two rear spring shackles each have two fittings on the inside of frame, and the universal joint spline is just to the rear of the transmission. All seven points require Viscous Chassis Lubricant every 1,000 miles.

On the Ambassador "600" there are only three fittings underneath. While there are two fittings used on the clutch idler shaft, which normally requires Viscous Chassis Lubricant every 1,000 miles, Nash recommends that if stickiness or squeaks develop a Nash dealer should be consulted. The third underneath point to lubricate on this "600" model is the propeller shaft center bearing. Remove the screw plug and fill with Motor Oil every 5,000 miles.

The SAE grade of Motor Oil recommended by Nash is the same for all models; SAE 30 for over 90° F. SAE 20 down to +32° F. No. 20 W down to +10° F., and No. 10W down to -10° F. For the "duration" drain and refill every 1,000 miles. Refill capacity is 5 qt. for the Ambassador "600" model, 6 qt. for model 6 (4260), and 7 qt. for the 8 cylinder models.

Motor Oil SAE 70 for above +32° F. and SAE 50 for below +32° F. is recommended for all models for both the standard transmission and overdrive type. The refill capacity for the standard unit is 4 pt. or lb., and 6 pt. or lb. with overdrive on models 6 (4260) and 8 (4280). Individual drain and filler plug holes are provided; fill to level of filler plug holes on both units (all models).

The capacity of the Ambassador "600" transmission is 1 pt. or lb. with standard transmission, and 3 pt. or lb. when overdrive unit is used. Do not use Extreme Pressure type of lubricants. Drain and refill every 10,000 miles (all models).

The differential on all models requires Nash approved Hypoid Gear Lubricant SAE 90 the year round. The capacity of the Ambassador "600" model is 3 pt. or lb. All other models require 4 pt. or lb. Drain and refill every 10,000 miles (all models).

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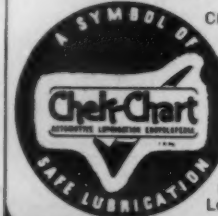
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